

Appendix 7.

State and EPA Comments on the Indianapolis
Pretreatment Interim Elements Submission
and City's Responses.

STATE COMMENTS ON PRETREATMENT PROGRAM

APRIL 28, 1983

<u>Contract Number</u>	<u>State Comment</u>	<u>City Response or Action</u>
1.	The State wants to review selected surveys.	The requested surveys have been forwarded to Mr. Lon Brumfield for review.
2.	The State wants to review the City's agreements with other cities.	Copies of these agreements are attached as Appendix 8.

ORDINANCE COMMENTS

3.	Pg 7 State checklist (attached) where does City have authority to deny contributions (403.8 (f)(1)(i).	Response to the comment is included in Appendix 7.
4.	Pg 9 State checklist Definition #2 "Applicable Pretreatment Standard.	Response to this comment is covered in Appendix 7.
5.	Pg. 11 State checklist #19 - Major contributor Clarify in Ordinance.	Response to this comment is addressed in Appendix 7.
5.	Pg. 21 State checklist Compliance schedule.	OK as is. See Pg. 44 of Ordinance Report.
6.	Pg. 26 State list Upsets	OK as is. See Pg. 12 of Ordinance.
7.	Pg. 26 State list Falsify information	OK as is. See pg. 27 in Ordinance Section 27.53
8.	Pg. 4 in Ordinance "Major Contributor" integrate into definition of industrial user, if appropriate.	Response to this comment is included in Appendix 7.

<u>Contract Number</u>	<u>State Comment</u>	<u>City Response or Action</u>
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9.	Change final Ordinance numbers to latest JMM values Pg. 10 in Ordinance.	
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PROGRAM COMMENTS

10.	Pg. 32 of State checklist Administrative Procedures.	Response to this comment is covered in Appendix 7.
11.	Pg. 33 State List IV - Forms	Response to this comment is addressed in Appendix 7.

D.P.W. RESPONSES TO STATE'S COMMENTS

Ordinance Comments

3. Section 27-22 (j) of the Sewer Use Ordinance addresses this.
4. This definition was added to the Ordinance "Definitions" section.
5. This definition was determined not to be necessary because it is not used in the body of the Ordinance.
8. The "Major Contributor" definition was dropped in lieu of the use of the definition for "Industrial User".

Program Comment #10

(Activity 3 - Administrative Procedures)

(ISBH Checklist No.'s)

1. Industrial Surveillance personnel make frequent contacts with industrial dischargers. At least annually an inspection report is completed on each industry (copy attached with other forms).
2. Requirement to notify POTW of change in discharge is contained in Industrial Discharge Permit (Section A.1) and in the Sewer Use Ordinance (Section 27-44 (k)).
3. Pretreatment Task 2 Report describes these procedures in detail.
4. Article III of the Sewer Use Ordinance describes the procedures for issuing Industrial Discharge Permits and the information required from industrial dischargers.
5. The City has required all permitted industries to submit self-monitoring reports since the start of its industrial waste control program in 1977. More recently the City added the requirement that modifications of existing pretreatment systems or new pretreatment technology be reviewed by City staff prior to submission to ISBH for issuance of a Construction Permit (Ordinance Section 27-48). The handling of data and information received is discussed in pretreatment Task Report 1.11 and 8 "Data Management Needs Analysis".
6. This is addressed in Ordinance Section 27-58.
7. This is covered in Ordinance Section 27-51.

8. The City has had an industrial inspection program since the beginning of the industrial waste control program in 1977. Inspections of industrial sites include all areas of each facility and an evaluation of the storage of chemicals and raw materials. Pretreatment Task Report 9, 11, 12 recommends that we begin inspecting "dry industries" every 4-5 years to confirm that they are dry. The City will implement this recommendation within the next year.
9. Pretreatment Task Report 9, 11, 12 discusses in detail the industrial monitoring program. Sampling points for most of the permitted (regulated) industries have been established and utilized since 1977.

The City does not "announce" scheduled monitoring to industry. Most sampling points were established to allow the City access for sampling without notifying the industry.
10. See #9.
11. The City has established a network of sampling points at the AWT's and in important interceptor sewers tributary to the AWT's. Composite samples are collected from these locations 365 days/year. Samples from these locations are analyzed when necessary to track industrial discharges responsible for AWT upsets. The City has already submitted a copy of its Upset Response Plan to ISBH.
12. The City requires all permitted industries to perform self-monitoring and submit monthly reports to the Industrial Surveillance Section. The proposed changes in the existing program, including the frequency of self-monitoring, are described in Pretreatment Task Report 9, 11, 12.
13. Pretreatment Task Report 1.11 and 8 describes how the industry's compliance record will affect the frequency at which it is sampled by the City. Non-compliance by an industry will increase the frequency of City sampling. This evaluation is continuous and on-going.

Program Comment #11

Attached are copies of the following forms as they are used for the Pretreatment Program: Permit, Permit Application, Self-Monitoring Form, Inspection Form, POTW Sampling Forms, BMR's.

Page #1 of

Permit No. # _____

Application No. # _____

City of Indianapolis
Department of Public Works

AUTHORIZATION TO DISCHARGE

INDUSTRIAL WASTEWATER TO THE MUNICIPAL SEWER SYSTEM

In compliance with the provision of Chapter #27 of the Municipal Code of the City of Indianapolis, Indiana, and in accordance with General Ordinance #44, 1978,

is authorized to discharge wastewater from a facility located at

to the Indianapolis Municipal Sewer System.

The permit shall become effective on

This permit and the authorization to discharge wastewater shall expire at midnight _____, 19____. In order to renew authorization to discharge beyond the date of expiration, the permittee shall submit such information and forms as required by the Department of Public Works, City of Indianapolis, Indiana, no later than sixty (60) days prior to the date of expiration.

Signed this _____ day of _____, 19____, for
the Department of Public Works, City of Indianapolis, Indiana.

Dale R. Bertelson, Section Head
Industrial Surveillance

Richard A. Rippel, Director
Department of Public Works

Part I

Page # of

Permit No. # _____

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning _____ and lasting until _____, the permittee is authorized to discharge from a facility located at _____

Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS

Effluent Characteristic	Daily Average	Monitoring Frequency	Sample Type
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SPECIAL LIMITATIONS

- a. In addition to the foregoing limitations, the provisions of Sections #307 and #308 of the "Federal Water Pollution Control Act Amendments" of 1972 and Indiana Stream Pollution Control Board Regulations are incorporated by reference into this permit.
- b. Samples taken in compliance with the monitoring requirements above shall be taken _____
- _____
- _____

B. MONITORING AND REPORTING

1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

2. Reporting

The permittee shall submit monitoring reports to the Industrial Surveillance Branch of the Department of Public Works containing results obtained during the previous month and shall be postmarked no later than the 15th day of the month following each completed monitoring period. The first report shall be submitted by _____ for the month of _____.

a. The Industrial Surveillance Branch is at the following location:

Industrial Surveillance Branch
Department of Public Works
2700 South Belmont Ave.
Indianapolis, Indiana 46221

3. Test Procedures

Test procedures for analysis of pollutants shall conform to regulations published pursuant to Section #304 (g) of the Act, the most recent edition of "Standard Methods for the Examination of Water and Wastewater", or other methods approved by the Indiana Stream Pollution Control Board, under which such procedures may be required.

4. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following data:

- a. The Exact Place, Date and Time of Sampling
- b. The Dates the Analyses were Performed
- c. The Person(s) Who Performed the Analyses
- d. The Analytical Techniques or Methods Used
- e. The Results of All Required Analyses

5. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation and recording from continuous monitoring instrumentation shall be retained for a minimum of three (3) years, or longer if requested by the Industrial Surveillance Branch of the Department of Public Works.

C. Special Conditions

SAMPLE TYPES:

GRAB: A portion of the discharge taken from the sampling point during a period of maximum flow and/or production.

COMPOSITE: A sample made up of equal portions of the discharge taken from the sampling point at 30 minute intervals during the production cycle. No samples are to be taken on off-days or when there is no production.

ESTIMATE: Total of calculation made from pump discharge ratings and/or from billings of water suppliers.

METER: Readings taken from a flow meter.

A. MANAGEMENT REQUIREMENTS

1. Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit. the discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions, production increases, or process modifications which will result in new, different or increased discharges of pollutants must be reported by submission of a new application or, if such changes will not violate the effluent limitations specified in this permit, by notice to the permit issuing authority of such changes. Following such notice, the permit may be modified to specify and limit any pollutants not previously limited.

2. Non-Compliance Notification

If, for any reason, the permittee does not comply with or will be unable to comply with any daily average effluent limitations specified in this permit, the permittee shall provide the Industrial Surveillance Branch of the Department of Public Works the following information, in writing, within five (5) days after becoming aware of the condition:

- a. A description of the discharge and cause of non-compliance.
- b. The period of non-compliance, including exact dates and times, or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the non-complying discharge.

3. Facilities Operation

The permittee shall at all times maintain a good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

4. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to the Municipal sewer system resulting from non-compliance with any effluent limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.

5. The Industrial Surveillance Branch shall be notified immediately in the event of an accidental spill or slug discharge into the sewer system at 633-5476 or 353-2111 after 5 p.m. Monday-Friday, or weekends and hoildays.

6. Removed Substances

Solids, sludges, filter backwash or other pollutants removed from or resulting from treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering Municipal sewer systems and to be in compliance with all Indiana Statutory Provisions, regulations, relative to refuse, liquid or solid waste disposal.

7. Power Failures

In order to maintain compliance with the effluent limitations and prohibitions of this permit, the permittee shall, upon the reduction, loss or failure of one or more of the primary sources of power to the facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit, the permittee shall halt, reduce or otherwise control production or discharge in order to maintain compliance with the effluent limitations and conditions of this permit.

8. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities from which the authorized discharge emanates, the permittee shall notify the succeeding owner or controller of the existence of the permit by letter, a copy of which shall be forwarded to the Industrial Surveillance Branch of the Department of Public Works.

9. Permit Modification

After notice and opportunity for a meeting with the Industrial Surveillance Office, this permit may be modified, suspended or revoke in whole or in part during its term for shown cause including, but not limited to, the following:

- a. Violation of any terms or conditions of this permit.
- b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts,
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

10. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of the permit, shall not be affected thereby.

INDIANAPOLIS DEPARTMENT OF PUBLIC WORKS

ADVANCED WASTEWATER TREATMENT

INDUSTRIAL DISCHARGE PERMIT APPLICATION

Section I Applicant and Facility Description

Unless stated otherwise, all items are to be filled out completely. If an item is not applicable indicate by noting "NA".

1. Name of Facility _____

2. Mailing Address _____
3. Address of Premises _____
4. Applicant's Authorized Agent or Contact Official

Name and Title

Phone Number

5. Responsible individual to contact in case of emergency (e.g., spill, fire, process upset, etc.)

Name and Title

Phone Number

Section II Plant Operations

1. On a separate sheet, provide a detailed description of the manufacturing process or service activity provided on the premises. Include a description of how each process waste stream is generated. Information should be related to Question #5 in Section III.
2. Principal raw materials used and intermediate products:

3. Chemicals and compounds used (Refer to Table I):

4. How are these chemicals stored?

5. Description of products or service and annual production rate, if applicable:

6. If your facility is subject to a National Categorical Pretreatment Standard, has a baseline report (403.12(b)) been submitted:

Section III Water Usage and Discharge Information

1. List intake water sources and volumes:

<u>Source</u>	<u>Volume</u>	(Check One) <u>Estimated/Measured</u>
Municipal Water System	_____ gallons/day	_____/____
Private Well	_____ gallons/day	_____/____
Surface Water	_____ gallons/day	_____/____
Other	_____ gallons/day	_____/____

2. List average volume of discharge or water loss to:

<u>Source</u>	<u>Volume</u>	(Check One) <u>Estimated/Measured</u>
*City Sewer System	_____ gallons/day	_____/____
Natural Outlet	_____ gallons/day	_____/____
Waste Hauler	_____ gallons/day	_____/____
Evaporation	_____ gallons/day	_____/____
Contained in Product	_____ gallons/day	_____/____
Other (Specify)	_____ gallons/day	_____/____

3. List average water usage for:

Source	Volume	(Check One)
		<u>Estimated/Measured</u>
*Process Wastestream #1	_____ gallons/day	
*Process Wastestream #2	_____ gallons/day	
*Process Wastestream #3	_____ gallons/day	
*Cooling Water	_____ gallons/day	
*Sanitary Water	_____ gallons/day	
Boiler Feed	_____ gallons/day	_____/____
Other (Specify)	_____ gallons/day	_____/____

*These values must be average measured volumes, not approximated.

4. Is the discharge to the sewer: Continuous _____
Batch _____
If batch discharge, give the frequency of occurrence:

What is the average volume in gallons of each batch?

What is the peak volume in gallons of each batch?

5. Provide a schematic of the plant flow showing process, sanitary, cooling streams, etc., and their point of entry into the sewer system. Indicate on the schematic, the point where sampling will occur.

Section IV Pretreatment

1. Describe any wastewater treatment equipment or processes in use:

2. Describe any additional pretreatment facilities and/or processes under consideration. Include a specific time schedule for completion:

3. If a treatment system exists, what method is utilized to dispose of pretreatment sludges/residuals?

4. If a private hauler is used for sludges/residuals disposed, give name and ISBH permit number.

5. Where is ultimate disposal site for sludges/residuals?

Section V

Wastewater Characteristics

1. Attach any sampling data pertaining to the facility discharge to the sewer system. Explain where and when the sampling was accomplished, what type of sample was taken (e.g., grab, composite), and how many were analyzed.
2. If no sampling data is available, testing must be performed on the discharge for any pollutant believed to be present. A representative list of pollutants is contained in Table I, attached to this application. The sample must be a 24-hour composite taken during normal production activity and/or representing typical wastewater flows.

DEPARTMENT OF PUBLIC WORKS
INDUSTRIAL SURVEILLANCE
2700 SOUTH BELMONT AVENUE
INDIANAPOLIS, INDIANA 46221

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MO. YR.

[illegible]

DATE _____

INDUSTRIAL INSPECTION SURVEY

NAME OF INDUSTRY _____ S.I.C. # _____

LOCATION _____ PHONE _____

CONTACTED _____ DATE _____ TIME _____

NO. OF SHIFTS _____ APP. NO. EMPLOYEES _____ DISCHARGE FLOW _____

WATER SOURCES _____

INDUSTRIAL DESCRIPTION _____

PRINCIPLE PRODUCTS _____

PRETREATMENT CAPABILITIES _____

SLUDGE OR RESIDUE DISPOSAL _____

NUMBER OF CONNECTIONS _____ SAMPLES TAKEN _____

PRIMARY USES OF WATER _____

HEATING & COOLING SYSTEMS _____

CHANGES IN OPERATIONS _____

DISCHARGES OTHER THAN SEWER _____

STORAGE OF CHEMICALS _____

REMARKS _____

INSPECTOR _____

INDUSTRIAL WASTE WATER SAMPLE ANALYSIS

INDUSTRY OR BUSINESS: _____

LOCATION: _____

CONTACT PERSON: _____ PHONE: _____

DATE: _____ TIME: _____ M WEATHER: _____

DAY OF WEEK: _____ SAMPLED BY: _____

FIELD OBSERVATIONS

COLOR: _____ ODOR: _____

FLOATING MATERIAL: _____ TEMP.: _____ pH: _____

FLOW: _____ EST OTHER: _____

SAMPLE TYPE: _____ SAMPLE NUMBER: _____

LAB ANALYSIS

ANALYSIS	CK	RESULTS	RUN BY	COMMENTS
pH				
SUS. SOL.		mg/l		
B.O.D.		mg/l		
C.O.D.		mg/l		
AMMONIA-N		mg/l		
OIL & GREASE		mg/l		
TOTAL HYDROCARBON		mg/l		
CADMIUM		mg/l		
COPPER		mg/l		
CHROMIUM		mg/l		
LEAD		mg/l		
NICKEL		mg/l		
ZINC		mg/l		
TOTAL CYANIDE		mg/l		
PHENOLS		mg/l		

40CFR403.12(b) Industrial User Pretreatment Baseline Monitoring Report: Metal Finishing Standards

(1) Identification

Division: Truck & Bus Manufacturing

Plant: Indianapolis

Mailing Address: P. O. Box 388

Street Address: 340 White River Parkway

City: Indianapolis

City: Indianapolis

State & Zip Code: Indiana 46206

State & Zip Code: Indiana 46222

(2) Environmental Control Permits

Permit Number	Type	Issuing Authority
346502	Industrial Wastewater Discharge	Indianapolis DPW
IN0001902	NPDES	State (Indiana)
IND079583720	RCRA	EPA

(3) Description of Operations (see attached schematic process diagram)

Nature	Average Production Rate (units/day)	SIC Code
Sheet Metal Stampings	3500 Units/day	3714
Welded Subassemblies	3500 Units/day	3714
Prime Painted Subassemblies	1750 Units/day	3714

(4) Flow Measurement - Gallons per Day (gpd)

	Average, gpd	Maximum, gpd	Type of Discharge
Total Plant Flow*	511,000	750,000	Continuous
Regulated Flow	211,000	310,000	Continuous
Nonregulated Flow	0	0	Continuous
Dilution Flow	300,000	440,000	Continuous

* Total Plant Flow = Regulated + Nonregulated + Dilution

(5) Measurement of Pollutants - For Year 1983

Sample	Dates	2/9	2/10	2/11	2/14	2/15	2/16
	Times	16 Hrs	16 Hrs	16 Hrs	16 Hrs	16 Hrs	16 Hrs
	Type	Comp	Comp	Comp	Comp	Comp	Comp

Methods of analyses
in accordance with
40CFR136, Table 1

(5) Measurement of Pollutants(cont.

		Pollutant Parameters									
		CN,T	Cu	Ni	Cr	Zn	Pb	Cd	Ag	TTO*	
Pretreatment Standard	Avg.	0.65	2.07	2.38	1.71	1.48	0.43	0.26	0.24		
	Max.	1.20	3.38	3.98	2.77	2.61	0.69	0.69	0.43	4.57 I	2.13F
Adjusted Standard**	Avg.	0.26	0.85	0.98	0.70	0.61	0.17	0.10	0.10		
	Max.	0.49	1.39	1.64	1.14	1.07	0.28	0.28	0.18	1.89	0.88

*Total Toxic Organics I=interim compliance 6-30-84 F=final compliance 2-15-86

**Adjusted standard using the combined wastestream formula 40CFR403.6(e)

Wastewater Discharge	Avg.	ND@.02	0.05	1.29	0.75	3.54	2.90	ND@.01	ND@.01		
	Max.	ND@.02	0.16	3.27	1.81	11.00	8.17	ND@.01	ND@.01	0.077	
Wastewater Discharge	Avg.										
	Max.										

ND - Not Detected @ Specified Concentration.

(5viii and 6) Certification

The preceding sampling and analyses are representative of normal work cycles and expected pollutant discharges to the POTW. Based on this data, pretreatment standards:

- ☐ are being met on a consistent basis
- ☒ are not being met on a consistent basis ; therefore, additional operation/maintenance and/or pretreatment to meet the standards will be necessary absent alternative limits.

R. L. Hohn

Title Environmental Engineer

Date 2/20/84

(Qualified Professional)

D. L. Fruitt

Title Plant Manager

Date 2/20/84

(Authorized Representative)

(6c and 7) Compliance Schedule

Increment of Progress

Completion Date

1. Submit appropriation request for funds to build treatment facility. 11/1/83
2. Retain Architect, initiate design. 12/1/83
3. Trades, equipment quotations out for bid. 1/15/84
4. Bids due back. 2/15/84
5. Begin construction, equipment installation. 3/1/84
6. Completion of Project. 6/15/84
7. Facility on-line. 6/30/84

It is projected that the increments of progress being implemented to meet the Electroplating Pretreatment Standards, as reflected in this compliance schedule, will also effectuate compliance with the Metal Finishing Pretreatment Standards. After completion of this schedule, an assessment will be made to determine if further increments of progress are required.

Supportive data for submission's Exhibit B-5, revised to incorporate verbal comments presented by ISBH staff members, on the derivation of industrial discharge limits, during meetings in April, June, July and November of 1983.

TASK 4 REPORT

TABLE 7-2 (Revised to Incorporate State's, Comments, 12/83)

AWT IMPACT BASE - LIMITS DEVELOPMENT DATABASE SUMMARY

ITEM	As 115	Cd 118	Cr(t) 119	Cv(VI) 120	Cu 121	CN-A 122	Pb 123	Hg 124	Ni 125	Ag 126	Zn 128	Pheno1 (5)	O+G(5)	References
AWT Impact														
A.S. Impact Limit/Lit (ug/l)	100	1,000	11,000	1,000	1,000	300	100	100	1,000	5,000	80	200,000	25,000	Tables 3-1 and 3-2
Nitrification Limit/Lit (ug/l)	---	5,200	---	250	480	340	500	---	250	---	80	4,000	---	Tables 3-1 and 3-2
Max. Pilot T.F. Influent Conc (1) (ug/l)	20	19	169	---	270	450	119	5	150	110	1,030	290	70	Tables 5-7 (Revised)
Pilot T.F. Influent Spike (ug/l)	270	60	630	30	450	600	700	4	300	---	900	500	---	Table 5-3
Avg. Belmont Influent (2) (ug/l)	5	5	71	---	111	127	136	0.53	63	5.6	455	170	50,000	Table 5-5 (Revised)
Avg. Southport Influent (2) (ug/l)	4	6	93	---	178	235	167	0.2	108	5	405	120	50,000	Tables 6-2, 6-4, 6-6
Avg. T.F. Influent (1) (ug/l)	4.2	5.9	58	---	93	102	27	0.45	67	10.4	405	170	11,000	Tables 5-7 (Revised)
POTW Primary Removal Rate (3) (%)	0	0	12	---	38	0	12	0	0	0	26	0	75	Tables 4-6 (Revised)
State Primary Removal Median (%)	---	7	16	---	18	---	20	22	6	---	26	---	---	(Ref. 10 + 15)
EPA Primary Removal (4) Avg. (%)	---	---	0	---	24	57	---	---	---	17	27	---	52	
POTW Justifiable Primary Removal (%)	0	0	12	0	38	0	12	0	0	0	26	0	75	
Selected T.F. Influent Limit (ug/l)	270	60	630	250	450	600	700	4	300	5,000	900	4,000	25,000	
AWT Influent Limit (ug/l)	270	60	716	250	726	600	795	4	300	5,000	1,216	4,000	100,000	

(1) Sampling period May-November 1982; (2) Sampling period January-February 1982; (3) From JMM mass balance; (4) Ref. EPA 440/1-80-301: Burns & Roe data for Belmont; (5) See discussion of individual compounds at end of chapter 7, Task 4 Report.

TABLE 1

**INDIANAPOLIS PRETREATMENT PROJECT
REVISED PILOT AWT PRIORITY POLLUTANT
REMOVAL RATES**

Pollutant	Analytical Detection Limit ($\mu\text{g/l}$)	Removal Rate Per Table 7-4 of Task 4 Report, 4/83 (1)			Revised Removal Rate Based on Assumption That ND = Detection Limit		
		Pilot			Pilot		
		POTW Infl Conc ($\mu\text{g/l}$)	AWT Effl Conc ($\mu\text{g/l}$)	Removal Rate (%)	POW Infl Conc (2) ($\mu\text{g/l}$)	AWT Effl Conc (3) ($\mu\text{g/l}$)	Removal Rate (%)
Arsenic	1	38	1.9	95	5 (4)	2.8	44
Cadmium	3	6	<3	>50	5	2.95	41
Chromium (T)	1	79	4.4	94	71	5.4	92
Chromium (Hex)	10	<10	<10	85	<10	<10	92 (5)
Copper	7	127	13	90	111	14	87
Cyanide (T)	5	122	18	85	127	19	85
Cyanide (A)	10	--	--	85	--	--	85 (5)
Lead	2	300	1.5	99	136 (6)	2.9	97
Mercury	0.2	1.05	0.1	90	0.53	0.28	47
Nickel	8	73	59	19	63	58	8
Silver	5	1.0	0.2	99	5.6	4.8	14
Zinc	7	455	225	52	455	218	52
Phenol	5	180	10	95	170	9.7	94

- (1) Assumes ND=0
 (2) Belmont Influent per Table 5-5 (Revised 7/20/83).
 (3) Pilot Ozone Effluent, per Table 5-8a (Revised 7/8/83).
 (4) Influent Arsenic calculated without one excessively high data value (330 $\mu\text{g/l}$).
 (5) Amenable cyanide and hexavalent chrome removal rates are assumed to be the same as for total cyanide and total chrome, respectively.
 (6) Influent Lead calculated without one excessively high data value (1200 $\mu\text{g/l}$).

TABLE 2

INDIANAPOLIS PRETREATMENT PROJECT
COMPARISON OF MEASURED AWT INFLUENT INDUSTRIAL POLLUTANT LOADINGS
WITH SUM OF REPORTED INDUSTRIAL DISCHARGES AND DOMESTIC BACKGROUND LOADINGS

Pollutant	Measured Rebound and Boil-off Influent			Sum of Known Industrial and Domestic Background Loads			Loading Corresponding to Discharger Flow Estimated Based on SIC Code						
	(1) Conc (mg/l)	(2) Loading (lb/d)	(3) Q _K Known Flow (mgd)	(4) Known Ind. Load (lb/d)	(5) Domestic Background Conc (mg/l)	(6) Domestic Background Load (lb/d)	(7) Total Known Load (lb/d)	(8) Loading not Accounted for by Known Discharges (lb/d)	(9) Q _K Estimated Additional Discharger Flow (mgd)	(10) Estimated Additional Loading per SIC Codes (lb/d)	(11) Fraction of Estimated Loading Required for Balance	(12) Fraction of Q _K to be Included in Calculation of Q _D (1)	(13) Calculated Q _D , Discharger Flow (mgd)
Arsenic	5	7.8	1.28	0.44	5	7.30	7.74	0.06	7.98	28.2	0	0.25	3.28
Cadmium	5	7.8	4.46	5.34	3	4.38	9.72	0	10.60	3.16	0	0.25	7.11
Chromium	71	111	5.49	34.1	20	29.2	63.3	47.7	9.79	283	0.17	0.25	7.94
Copper	111	174	5.24	56.5	100	146	202	0	7.35	157	0	0.25	7.08
Cyanide	127	199	4.70	23.9	25	36.5	60.4	138.6	9.94	122	1.14	1.00	17.90
Lead	136	213	2.92	14.1	20	29.2	43.3	169.7	10.48	128	1.32	1.00	22.04
Mercury	0.53	0.8	2.37	0.04	0.2	0.30	0.34	0.46	14.74	2.08	0.22	0.25	6.06
Nickel	63	99	6.19	30.4	10	14.6	45.0	54.0	8.72	197	0.27	0.30	8.81
Silver	5.6	8.8	0.65	0.33	5	7.30	7.63	1.17	10.36	2.50	0.46	0.50	5.83
Zinc	455	713	4.84	351	260	379	730	0	4.58	275	0	0.25	5.99
Phenol	170	267	5.97	145	10	14.6	160	107	11.29	101	1.06	1.00	17.51

1. Concentrations per Table 1, column 6.

2. Loading calculated assuming total flow = 188 mgd.

3. Q_K = sum of flows for industries with both flow and pollutant concentration reported in Survey or ISA files.

4. Known loading from industries with both flow and pollutant concentration reported.

5. Domestic sewage background concentrations per Table 7-6.

6. Domestic load assuming domestic flow of 175 mgd.

7. Sum of loads in columns 4 and 6.

8. Column 2 loading minus column 7 loading (or 0 if difference is negative).

9. Sum of reported flows from dischargers with SIC code corresponding to industrial category which is suspected of discharging the particular pollutant.

10. Estimated load corresponding to Q_K, based on computerized categorical characterization.

11. Fraction = column 8 loading ÷ column 10 loading.

13. Q_D = [F (from column 12) × Q_K ÷ Q_K] for all pollutants except CN, Pb and Phenol, where Q_D = (F (from column 12) × Q_E) + Q_K + ((column 8 loading - column 10 loading) ÷ column 4 loading) × Q_K

TABLE 3

**INDIANAPOLIS PRETREATMENT PROJECT
COMPARISON OF ORIGINAL AND REVISED
DISCHARGER FLOWS (Q_d)**

Pollutant	Original Q_d Basis (1) per Pilot Plant Report				Revised Q_d Basis (2) 7/83			
	Q_k (mgd)	Q_e (mgd)	Q_d (mgd)		Q_k (mgd)	Q_e (mgd)	Multiplier	Q_d (mgd)
Arsenic	0.63	4.81	4.24		1.28	7.98	0.25	3.28
Cadmium	1.88	11.63	10.60		4.46	10.60	0.25	7.11
Chromium	5.99	8.84	12.62		5.49	9.79	0.25	7.94
Copper	4.91	9.74	12.22		5.24	7.35	0.25	7.08
Cyanide	4.35	9.49	11.47		4.70	9.94	1.00	17.90 (3)
Lead	3.35	10.74	11.41		2.92	10.48	1.00	22.04 (3)
Mercury	2.05	7.64	7.78		2.37	14.74	0.25	6.06
Nickel	5.48	6.57	10.41		6.19	8.72	0.30	8.81
Silver	0.66	1.87	2.06		0.65	10.36	0.50	5.83
Zinc	5.84	6.49	10.71		4.84	4.58	0.25	5.99
Phenol	5.5	11.7	14.3		5.97	11.29	1.00	17.51 (3)

(1) Per Table 7-5, Pilot Plant Report, 4/83, $Q_d = Q_k + 0.75 Q_e$.

(2) Incorporate revisions to Industrial user database to include ISB file data for concentrations, and revised multiplier for Q_e .

(3) See Footnote 13 in Table 2.

TASK 4 REPORT

TABLE 7-6 (Revised)
BACKGROUND PRIORITY POLLUTANT
CONCENTRATIONS IN DOMESTIC SEWAGE

Pollutant	Background Concentration ($\mu\text{g/l}$)				Estimated Background
	EPA (1) Survey	Indianapolis (2) City Data	Indiana (3) State Guidelines	Indianapolis (4) POTW Influent	
Arsenic	<50	---	14	5	5
Cadmium	3	30	10	5	3
Chromium (T)	16	20	200	71	20
Chromium (VI)	---	---	200	>10	---
Copper	50	100	100	111	100
Cyanide (T)	35	---	25	127	25
Cyanide (A)	---	---	---	---	25
Lead	16	20	100	136	20
Mercury	0.2	---	---	0.5	0.2
Nickel	4	10	50	63	10
Silver	5	---	---	5.6	5
Zinc	200	260	500	455	260
Phenol	4 (5)	---	---	170	10 (5)
Oil + Grease	25,000	---	---	57,000	25,000

- (1) Data for 3 POTW's with less than 10% flow in the influent wastewater, per Reference 6 to the Task 3 Report (EPA 20 plant study).
- (2) Average results from analysis of eight residential sewage samples collected by the Indianapolis ISB in 1982. These samples were analyzed by AA, which is subject to a higher detection (and accuracy) limit than the ICP analysis used by EPA and JMM.
- (3) Guidelines in Indiana State Health Department meeting handout regarding design of local pretreatment programs, 1982. programs, 1982.
- (4) Composite influent to Belmont and Southport plants calculated using wastewater characterization data, collected Jan-Feb 1982.
- (5) EPA survey data measured phenol at 4 $\mu\text{g/l}$ by GC/MS, while the POTW influent and estimated background of 10 $\mu\text{g/l}$ are stated in terms of phenols measured by 4AAP method, which normally equals about 2.5 times the phenol measured by GC/MS.

TASK 4 REPORT

TABLE 7-4 (Revised to incorporate State's comments, 12/83)

WHITE RIVER IMPACT BASE
LIMITS DEVELOPMENT DATABASE SUMMARY

Item	As 115	Ca 116	Cr(VI) 119	Cr(VI) 120	Cu 121	Pb 122	Hg 123	Mn 124	Ag 125	Zn 126	Phos 127	O+G	References
RIVER IMPACTS													
EPA Acute Criteria (3) (µg/l)	440	9	14,176	21	58	52	---	599	4	4012	24	750	10,200
EPA Chronic Criteria (3) (µg/l)	---	0.07	---	0.29	5.6	3.5	---	42	.2	208	---	---	---
Indiana State : : Guldellies (µg/l)	100	20	250	50	20	25	---	50	.5	500	5	1000	100
River Background(4) (µg/l)	2	3	2	0	6	1	1	10	0.1	10	5	10	25
Fish Tissue Criteria (NAS)	---	---	---	---	---	---	---	---	.5	---	---	---	---
Fish Tissue Background (Avg.) ppm	.10	.09	.97	---	1.7	---	---	.29	.03	---	---	---	---
Fish Tissue Downstream (Avg.) ppm	.75	.16	.71	---	1.5	---	---	.39	.155	---	---	---	---
Drinking Water Standard (DWS) (µg/l)	50	10	---	50	1000	200	---	50	2	---	50	5000	300 (6)
On-site Daphnia Acute LC-50(1) (µg/l)	16	8	140	---	129	70	---	30	---	200	3	334	---
On-site Fathead Acute LC-50 (µg/l)	<10	9	60	---	127	500	---	50	<0.5	245	<1	250	---
Min. Fathead LC-50/Lit.(2) (µg/l)	15660	2000	27000	26000	430	81.5	---	1000	150	25000	4.8	870	---
Average Fathead LC-50/Lit. (µg/l)	15660	7180	28000	44000	523	125	---	---	150	26500	88	1430	---
Chronic Fathead LC-50/Lit. (µg/l)	---	46	1000	1990	19.9	18	---	---	---	527	---	70	---
AVG. Bluegill LC-50/Lit. (µg/l)	41,760	2100	71900	---	8300	100.7	---	440,000	---	---	60	12255	---

AVG. Bluegill LC-50/Lit.
(µg/l)

Table 3-4

TABLE 7-4 (continued)

Item	As 115	Cd 118	Cr(VI) 119	Cu 120	CN(a) 121	CN(b) (5)	Pb 122	Hg 123	Mn 129	Ag 126	Zn 128	Phenol	O+G	References
Channel Catfish Chronic LC-50/Lit. (µg/l)	---	14	---	---	---	---	---	---	---	70	---	---	---	EPA Criteria Document
Avg. Bluntnose Minnow LC-50/Lit. (µg/l)	---	---	---	267	---	---	---	---	---	---	---	---	---	Table 3-4
Selected River In-Stream Limit (max.) (µg/l)	44	14	250	50	26.7	25	302	50	0.5	500	5	1000	300	5000 See Note (8)
River Flow (Q7,10) (mgd)	32	32	32	32	32	32	32	32	32	32	32	32	32	Task 15 Report
Wastewater Flow (mgd) (Belmont and Southport)	188	188	188	188	188	188	188	188	188	188	188	188	188	Task 15 Report
AWT Effluent Limit Allowing for River Dilution (µg/l)	91	16	292	59	30	29	353	57	0.6	583	5	1169	347	5850
Pilot AWF Effluent (µg/l)	2.8	2.95	9.4	<10	14	19	---	2.9	0.28	58	4.8	218	9.7(4)	2000 Table 5-8 (Revised)
Indy POTW Influent (µg/l)	5	5	71	<10	111	127	---	136	0.53	63	5.6	458	170(4)	57000 Table 5-5, and 5-7 (Revised)
Pilot AWT Removal Rate (%)	44	41	92	92	87	85	85	97	47	8	14	52	94	95
EPA Removal Rate (Median) (%)	---	61	76	---	82	61	---	70	---	33	76	78	---	---
Controlling Removal Rates (7)	44	41	92	92	87	85	85	97	47	8	76	52	94	95
River Based AWT Inf. Limit Allowing for Removal (µg/l)	91	27	3650	738	231	193	2353	1900	1	634	21	2435	5783	117000

(1) NOE = LC-0 - concentration at which no test animals were affected. (2) Toxicity Data for samples with hardness >100 mg/l and <300 mg/l (3) values calculated.

(4) Calculated based on existing data and sampling results presented in the Task 15 Water Quality Report. (5) for 278 mg/l hardness as CaCO₃.

(6) EPA recommended drinking water standard. (7) EPA median rate is used for See the discussion of total versus amenable cyanide at the end of this chapter. (8) Indiana State guide-

silver because pilot test influent values were too close to detection limit to allow accurate removal rate determinations. (8) Indiana State guide-

lines were used for all compounds except for As, Cd, Cu and Phenol, for which special considerations were taken into account, based on ISBH staff review comments and discussions between ISBH and City staff members.



UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION V
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

REPLY TO ATTENTION OF:
5WQP-11

AUG 3 1 1983

Dr. Vicky Keramida
Pretreatment Program Project Manager
Department of Public Works
2460 City-County Building
Indianapolis, Indiana 46204

Dear Dr. Keramida:

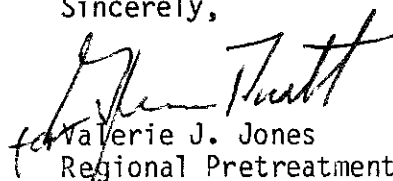
This letter and accompanying attachments summarize our discussion at the May 13, 1983 meeting and conversations we have had over the past few months regarding the development of the Indianapolis Pretreatment Program. In the attachment, I have specifically addressed the three final pretreatment interim elements which were submitted to the Region and the State for review on April 21, 1983 (i.e., the industrial waste inventory, legal authority, and technical information to support development of local effluent limitations).

As indicated in our May 13, 1983 meeting, the review process that we conduct with the State of Indiana involves an exchange and discussion of our review comments on pretreatment submittals from communities of special Federal interest before formal collective review comments are sent to that community. Since Indianapolis is a special Federal interest community, this review process would apply. However, in the interest of satisfying the State's request, as well as yours, we conducted the meeting in their absence so as to provide you with substantive review comments before your May 19, 1983 pretreatment public hearing. Please be aware, however, that the State was verbally apprised of our review comments prior to our May 13 meeting and they concurred with our comments. Any future review comments on the remaining Indianapolis pretreatment interim element submittals that have been submitted to the Region and the State will follow the aforementioned review process.

Finally, I would like to compliment you and your consultants on the organizational format and content of the interim element submittals which we reviewed. By far, they were some of the best submissions we have received to date in Region V.

Please contact me if you have any further questions on the enclosed comments.

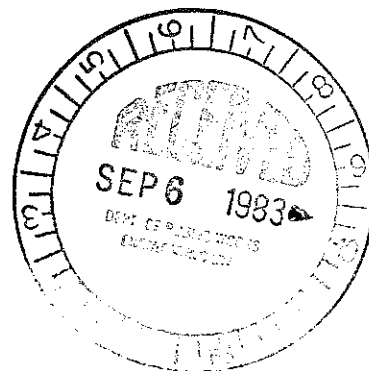
Sincerely,


for Valerie J. Jones
Regional Pretreatment Coordinator

Attachments

cc: Lonnie Brumfield
Larry Kane

Lee Bridges
Bob Peno



The following summarizes the Regional comments and responses from the City of Indianapolis and their consultants at the May 13, 1983 meeting in Chicago. Individuals participating in the meeting included Bob Robichaud, Regional Pretreatment Coordinator; Valerie Jones of JRB Associates; Dr. Vicky Keramida and Dale Bertelson of the Indianapolis Department of Public Works; and their consultants Larry Russell of James M. Montgomery Consulting Engineers, Inc. and Larry Scully of Peat, Marwick, Mitchell and Co. Review comments are also included on material the City has submitted to the Region for evaluation as a result of that meeting.

Task 1 - Industrial Waste Inventory

1. Comment: From reviewing the criteria for reducing the 2400 industrial facilities to 1000 industries to be surveyed, it is apparent that certain regulated industries might not have been surveyed. For example, categorical industries with less than 9 employees were not surveyed. All categorical industries capable of discharging process wastewaters, at a minimum, should be surveyed. Please clarify how the City intends to accomplish this task.

Response: All categorical industrial users were included ≤ 9 employees. The City will clarify.

2. Comment: It appears all electroplating industries were surveyed, but possibly not all machinery and mechanical products industries. Both industrial categories have the potential to discharge metals if they have a process discharge.

Response: The City will clarify.

3. Comment: The major purpose of the survey is to obtain qualitative information from industrial facilities so as to properly characterize wastewater discharge and possible toxicants. We are particularly concerned that the industrial questionnaire failed to obtain information on raw materials, chemicals used in the manufacturing process, in addition to intermediate products or by-products. This type of information would have provided some insight on possible toxic organics that might be discharged. From reviewing Appendix E, it appears that no toxic organic information has been provided, especially for platers that use solvents, the organic facilities (i.e., pharmaceuticals). Please explain your rationale for not seeking this type of information as well as the lack of information on organic toxics for the industrial categories likely to discharge these particular compounds. We are contemplating requiring the City, as part of program implementation, to gather the aforementioned information from certain industrial categories in an effort to upgrade the industrial survey. Please provide your comments regarding this point.

Response: The City is having difficulties obtaining this type of information because they lack confidentiality procedures. The City needs to obtain any necessary ordinance changes or legal determinations to assure that they have full authority to obtain all necessary toxicant or other information. This should be accomplished as soon as possible. The City agreed to the need to upgrade its industrial inventory.

4. Comment: Please provide completed questionnaires to the State and the U.S. EPA for the following industrial categories and SIC codes:

Coal Gasification (SIC: 2999)
 Gum and Wood Chemicals (SIC: 2861)
 Inorganic Chemicals Manufacturing (SIC: 2812, 2813, 2816, 2819)
 Iron and Steel (SIC: 3312)
 Organic Chemical Manufacturing (SIC: 2865, 2869)
 Paint and Ink Formulation (SIC: 2851)
 Pesticides (SIC: 2879)
 Petroleum Refining (SIC: 2911)
 Pharmaceuticals (SIC: 2834)
 Plastics & Synthetics (SIC: 2821, 2822, 2823, 2824)
 Rubber Processing (SIC: 2822, 2891, 3031)
 Timber Products Process (SIC: 2491)
 Miscellaneous Chemicals (SIC: 2831, 2833, 2895, 2899)

Response: The City submitted these questionnaires on June 3, 1983. See Attachment II for the Region's review comments.

5. Comment: On page 11.8, it was indicated that a final list will be developed. This list should be submitted to the State/U.S. EPA prior to the City applying for pretreatment authority.

Response: The final list will be part of Appendix E.

6. Comment: If the City intends, as part of pretreatment program implementation, to utilize a permit system a clear description of which industries will be required to have a permit, along with applicable procedures for issuing/modifying permits needs to be submitted as part of the enforcement/monitoring procedures. (It was apparent from our review of Appendix D that dischargers of process wastewaters will need permits).

Response: See Task 9-12. 236 users will be issued permits.

7. Comment: Based on our review of Appendix D, it appears that additional screening of the entries is warranted. Specific examples are:

- a) Industries listed in the mechanical products category might be integrated facilities covered by the electroplating regulations (e.g., Chevrolet Motor Division, Chrysler Corporation, Ford Motor Company).
- b) Industries are listed as having no process wastewater discharge, but their total discharge is quite high (e.g., Industrial Anodizer).
- c) Some facilities have a city permit, but have no discharge (e.g., Wright Manufacturing).
- d) Some facilities have a city permit, but have no process discharge (e.g., Custom Die Casting).

Response: City will do additional screening and clarify the above discrepancies.

8. Comment: Please explain the "minor regulated category".

Response: U.S. EPA to provide reference page for this comment.

9. Comment: In developing Appendix E, Wastewater Characterization by Industry, was toxicant information from the completed questionnaires entered into the computers? As discussed earlier, we are quite concerned regarding the lack of toxic organic information. We cannot believe Eli Lilly only discharges phenolics. Additionally, there is no listing of cleaning solvents from facilities covered by the electroplating or mechanical products category.

Response: City used four sources to verify the wastewater data:
1) Laboratory analysis, 2) EPA estimates, 3) Questionnaires, and
4) Self-monitoring reports.

Task 5.1 - Draft Sewer Use Ordinance

A. General Comment

The following comments are specific to the various provisions of the April 15, 1983 draft sewer use ordinance and are a result of technical staff review. A decision regarding whether the City has legal authority pursuant to 40 CFR 403.8(f)(2) will be rendered once the City submits a signed legal opinion statement from the City Attorney to address this requirement, which should also include an analysis of the City's authority for controlling users in satellite communities serviced by the City (i.e., multi-jurisdictional responsibilities). It appears from a cursory review of the legal authority statement that certain modifications might be warranted. Copies of any modifications should be forwarded to the State/U.S. EPA as soon as possible.

Please be advised that the City should not proceed with formal enactment of the ordinance until the State/U.S.EPA finds it acceptable.

Response: The City submitted its intergovernmental agreements to the Region for review. However, the City was informed that a review would not be performed until the City's Attorney provides an initial evaluation of the agreements for Pretreatment.

B. Specific Comments

Section - 27-1 - Purpose & Policy

1. Comment: Will all industrial users be issued discharge permits?

Response: 236 users will be issued permits. City will clarify who will receive permits in procedures.

Section 27-2 Definitions

1. Comment: The following terms should be defined (See Regional Model Ordinance or State's guidance document for appropriate definitions):

1. Applicable pretreatment standards (users should comply with all Federal/State/local standards for reporting requirements)
2. Approval authority
3. Compatible/incompatible pollutants
4. General Pretreatment Regulations
5. Pass-through
6. Upset
7. Significant or major user (if the City plans on using such a broad classification system to determine who receives permits)
8. 330IAC 5-12-2 Indiana Pollution Laws
9. ISBH
10. 40 CFR 136
11. State Disposal System Permit
12. Wastewater hauler

Response: The City agreed to add all of the above terms in their sewer use ordinance with the exception of term #3. They requested additional time to think about inclusion of this term.

2. Comment: Industrial waste should not be limited strictly to liquid wastes (see model ordinance).

Response: the City will clarify.

Section 27-4 Regulation of Discharge to Public Sewers

Item (c)(1)

1. Comment: The City should consider developing a lower explosive limit (L.E.L.) and/or list typical compounds (see enclosure for typical language).

Response: The City agreed to review the enclosure and incorporate appropriate language.

Item (c)(4)

2. Comment: The City needs to add more to its heat restriction (see 40 CFR 403.5(c)).

Response: The City will do this.

Item (e)

3. Comments:

- a. The City needs to define at which point the limitations apply.
- b. We defer comments on specific limits pending a detailed review of the technical documents that support any modifications to the limits shown
- c. Although not required, the words Federal categorical standards should be inserted.

Response: The City agreed to clarify the above items in the sewer use ordinance. In addition, Section 27-6 will be modified to reference language on the above items.

Section 27-12

1. Comment: There cannot be special agreements where Federal categorical standards and requirements apply.

Response: The City will clarify.

Section 27-14

1. Comment: Does this provide ample authority for no-notice inspection, if deemed necessary by the City?

Response: The City gave an affirmative response.

Section 27-41

2. Comment: This Section requires all users to obtain a permit. However, from reviewing the user survey not all the industries discharging process wastewaters have a permit.

Response: This was previously discussed. City will add "as deemed by by the Director to have permits".

3. Comment: We suggest that the City, once it has formal pretreatment program authority, consider a systematic program of modifying all present permits, as well as issuing permits to insure standardization of conditions as described in Section 27-44.

Response: This will be discussed under procedures.

4. Comment: We request that the City develop an appropriate discharge permit form and submit it to the State/U.S.EPA for review.

Response: City is developing this form now and will submit soon.

Section 27-42

1. Comment: We believe that additional information should be sought from a select number and categories of industrial users, especially information on raw material and chemical utilization. We have attached an example application form developed by Rockford Sanitary District. (Also refer to model ordinance for additional informational needs).

Response: This will be added to the permit application requirements.

Section 27-50 Periodic Compliance Reports

1. Comment: We strongly encourage the City to consider submittal of self-monitoring reports more frequently than June and December, possibly quarterly, due primarily to the large volume of permits and the need to determine compliance by users within a shorter time span.

Response: The City indicated Tasks 9-11 as well as Task 8 addressed our concerns.

Section 27-48 - Pretreatment

1. Comment: The first sentence should be changed to read "Users shall provide necessary wastewater treatment as required to comply with this Ordinance and shall achieve compliance with all applicable Pretreatment Standards within the time limits specified in the industrial permit."

Response: City will change this.

2. Comment: The City needs to discuss with the ISBH their involvement in receiving plans and specifications.

Response: City will clarify that only the State can approve plans and specifications.

3. Comment: There is no section on operating upsets (see 40 CFR 403).

Response: The City will consider including this as a provision in the ordinance.

4. Comment: There does not appear to be a provision for assessing penalties (i.e., fines) for users falsifying information (see model ordinance).

Response: The City will clarify.

AUG 3 1 1983

Attachment II to Letter of _____

The following comments are offered regarding the Region's evaluation of completed industrial waste questionnaires from targeted facilities in Indianapolis as submitted to the Region by the City on June 3, 1983.

1. The information requested on the Industrial Wastewater Pretreatment Questionnaire does not include any information on raw materials, chemicals used in the manufacturing process, by-products, etc. There is a list of 129 priority pollutants - the industries are requested to "check" the pollutants believed to be present in the wastewater. However, a review of the surveys indicates that the responses or "checks" on the lists are minimal, at best, for several industries (i.e., Shelby Paint & Enamel, Standard Paints, Inc., United Coatings, Dow Chemical, Eli Lilly, Manufacturing Chemists, Kerr-McGee Chemical Co., etc.).

As discussed at our May 13, 1983 meeting, the City should obtain any necessary ordinances or legal determinations to assure that they have full authority to obtain all necessary toxicant or other information from its industries. Please provide this information which is missing or the Region will proceed to do so.

2. It appears that a review of industrial categories and SIC codes are in order. We noted a discrepancy with the classification of Industrial Liquid Waste Disposal as SIC 7399 (Business Services) when it should be SIC 2911. Please review the SIC codes for accuracy and identify multiple SIC codes where applicable.

Task 3 - Wastewater Characterization

1. Comment: On page 4-3, it is indicated that there are 1600 lbs/day of toxic organics plus 1700 lbs/day of toxic metals entering the Belmont plant. Elsewhere in this report, a decision has been made not to develop specific toxic organic limits since the levels are not of concern. We believe that the City should give serious consideration to developing a total toxic organic (TTO) "influent value" and place such provision in the sewer use ordinance.

Response: The City will consider this suggestion and advise the Region of its final decision.

[Note: While not discussed at the meeting, these comments (Item #s 2, 3, and 4 below) were discussed in a conference call on May 17, 1983 between the Region and the City. The City agreed to follow up on these additional comments.]

2. Comment: There were no PCBs or 2,3,7,8-TCDD predicted or found in Table 2-4; however; the prediction cut-off was only 0.5mg/l. These are not adequate sensitivities for these parameters.
3. Comment: On page 4-5, it was mentioned that samples were aerated for 15 hours prior to static minnow bioassay to prevent low D.O. from killing the fish. The City should have analyzed a few samples for volatiles before and after the 15-hour aeration. In addition to volatile organics, 15 hours of aeation should have significantly reduced cyanide, ammonia, phenol, etc. However, Table F-2 in Appendix B indicates little effect on ammonia in Daphnia Static. This needs to be clarified.
4. Comment: From reviewing Table F-1, Appendix B, current secondary effluent was typically not acutely toxic to Daphnia magna at the Belmont plant (it could pass the U.S. EPA screening test), but it would be borderline at the Southport plant. Our screen fails effluent that kill more than 20 percent of the organisms at 100 percent effluent. The Southport plant had 2 out of 4 samples which resulted in 15 percent and 35 percent mortality in 100 percent effluent. The City should determine the cause of this toxicity and the appropriate action.

Task 4 - Pilot Plant Results & Technical Ordinance Support Information

1. Comment: There appeared to be no discussion of the bioaccumulative nature of certain toxicants found in the effluent from either the Belmont or Southport plants.

Response: The City will do additional sampling to address this concern.

2. The methodology for developing the proposed limits appears logical. However, two observations are made. First, the removal rates used in the calculations are based on the pilot plant performance data. Second, the report defers to a future date the need for the City to establish a sewer use ordinance limit based on sludge impact. This is due to the fact that the City's sludge is incinerated. We request that the City, as part of the program implementation, commit to evaluating on an annual basis its discharge limitations, especially once the full scale AWT plants are fully operational and actual removal data can be determined. Also, if the City sludge disposal options change, reevaluation of limits will be warranted.

Response: The City will do additional sampling at the upgraded Belmont and Southport plants to determine actual removal rates and compare these values to the pilot plant removal rates. The City stated that sludge would never impact local limits because of economic consideration.

3. Comment: We propose two options for the City's consideration regarding the incorporation of the proposed local limitations into the sewer use ordinance:

Option 1: Incorporate the proposed number as interim final limits in the sewer use ordinance until the actual removal rates at the upgraded Belmont and Southport plants are available and can support the proposed local limitations.

Option 2: Retain the existing local limitations in the sewer use ordinance and by July 1, 1984, modify these numbers to reflect the actual operational data (i.e., removal rates obtained from the Belmont and Southport plants).

Response: The City agreed to evaluate both options and will advise the Region of their final decision.

Table 3-3

1. Comment: We request submission of the complete GC/MS computer tape for all toxicants analyzed by the City on the influent, effluent, and sludge for the Belmont and Southport plants. Any additional peaks identified by the City should also be submitted in addition to the 126 priority pollutants.

Response: The City will provide this data for our review and evaluation.

Table 3.6

1. Comment: From reviewing the City's "list of concern toxicants", we observed that several organics were excluded from further consideration (i.e., 1, 2- Dichlorobenzene, Dichlorobromomethane, Chlorodibromomethane, Di-n-butyl phthalate, Tetrachloroethylene, Trichloroethylene and Antimony) by the City since the quantitative levels did not constitute 10 percent of the inhibition threshold values for treatment operational units. Why were treatment operational processes only considered and what is the basis for selection of 10 percent as a cut-off value?

Response: The City will clarify.

2. Comment: Chronic toxicity effects were generally lacking and more emphasis was placed on acute toxicity effects while Task 15, "Water Quality of the White River," indicates chronic effects. This comment warrants further clarification.

Response: The City will clarify.

3. Comment: Why was testing not done for the presence of the sodium salt form of PCP since it is more water-soluble than PCP? In addition, testing for chlorinated forms of dioxins should have been conducted.

Response: The City is doing the above testing as precautionary measures. However, locating a qualified laboratory to perform this type of analysis has been difficult.

RESPONSE TO EPA COMMENTS ON INDIANAPOLIS PRETREATMENT PROGRAM

TASK 1 REPORT

- 1&2. The City has a list of all the local categorical industries, including those not surveyed due to their insignificant size. The Industrial Surveillance Branch will survey, in the future, the industries omitted in the original surveys as staff time and computer system allow.

The City has already identified approximately 80 industries that could potentially be affected by electroplater/metal finisher categorical standards. These industries were pulled from our survey using identifying SIC numbers. (See attached listing.)

3. Information on raw materials, intermediates and by-products from industrial processes was not requested during the Industrial Survey because the Department was not prepared at that time to guarantee confidentiality of trade secrets to industries requesting this type of treatment for this information. The City is currently establishing procedures similar to those used by the Indiana State Board of Health for handling confidential information.

TASK I, Appendix E, already contains some information on toxic organics discharged by various industries. The Industrial Discharge Permit Application (attached) has been revised to enable the Department to obtain the type of information mentioned by EPA, i.e., raw materials, intermediates and by-products as well as more detailed information on the actual production processes and quantities and types of toxic organics used and/or discharged. Legal authority for obtaining this information is provided in Section 27-42, ss 8, of the new Ordinance. The City will acquire these data through the renewal process of the industrial permits, by the use of the revised Application.

4. The City has provided the questionnaires requested on two separate occasions. They were sent to U.S. EPA Region V on 6/6/83, via certified mail. The return receipt indicates that the package was received on 6/8/83 (copy enclosed). At the request of Ms. Valerie Jones, the questionnaires were sent again on 10/03/83, this time by regular mail. The response #3 above applies also to Attachment II, Comment 1. The City has taken care of the suggestions in Comment 2, and the correct SIC code was stated on ILWD's new permit.
5. Two final survey lists have been developed. The first is TASK I, Appendix E, which lists alphabetically all industries identified during the survey as having a process discharge to the City sewers. Flow and pollutant concentration data is included in this list. Appendix E was submitted to the ISBH and EPA on December 1, 1982. The City also has a master list of all industries identified prior to the survey, including those with no discharge, fewer than 10 employees, or outside the sewer service area.

6. The City's pretreatment program will continue to utilize a system of industrial discharge permits. The industries required to have permits (236) and the criteria for determining which industries will have permits, along with recommended sampling frequencies and self-monitoring frequencies, are given in the TASK 9, 11, 12 Report and summarized in Tables 3-7a and 3-7b of the Report. The procedures for issuing/modifying permits are covered under Article III of the new Ordinance.
7. Industrial Surveillance Branch staff has reviewed Appendix D and made the following comments:
 - a. There are up to 4 SIC numbers for all industries surveyed. Those with integrated plating operations (your examples - General Motors and others) can be picked out by checking second, third, and fourth SIC numbers. We are currently able to do this manually but our computer system should facilitate this task considerably. We have been able to identify over 80 industries that could be subject to the electroplater and/or metal finisher standard (see attachment for response to comment #2).
 - b. There was a mistake made in the printout. Industrial Anodizing discharges a high volume of wastewater to the City's sewer. A small portion of this volume is process wastewater, the remainder is a combination of rinse water and cooling water. This industry has an Industrial Discharge Permit and is monitored by the Industrial Surveillance Branch.
 - c. Wright Manufacturing is located in one of our satellite communities (Ben David Conservancy District) and is therefore technically not discharging directly to the Indianapolis sewer system. Their discharge is metered with the rest of the wastewater flow from this community. Wright manufacturing has had an Industrial Discharge Permit for at least five (5) years. The Industrial Surveillance Branch routinely samples the discharge from this industry.
 - d. Custom Die Casting has a total wastewater discharge of 13,300 gpd (average). Their "process wastewater" is actually contact cooling water and Industrial Surveillance routinely collects samples for analysis from their outfall. This is a very insignificant discharge.
8. These industries appear in the Task I Report because of their SIC numbers only. The list (Industry Category #37) shows only six (6) which discharge to the City sewers. Five (5) of these now have Industrial Discharge Permits; the sixth has an inconsequential discharge (i.e., small volume and no toxics) that did not merit our attention or the burden of self-monitoring.

TASK 5 REPORT

General Comment Response

Attached please find copies of the Amendments to the City's intergovernmental Agreements, governing the interjurisdictional pretreatment issue for industrialized and non-industrialized communities. These new Amendments are ready for adoption.

Section 27-1

1. Not all industrial users will be issued discharge permits. The guide in the TASK 9, 11, 12 Report will be followed. There will be four (4) industrial categories. Categories 1, 2, and 3 will be issued permits (approximately 236). Category 4 industries will be inspected once every five (5) years.

Section 27-2

1.
 1. Applicable Pretreatment Standard - added to revised Ordinance.
 2. Approval Authority - added to revised Ordinance.
 3. Compatible/Incompatible Pollutant - terms are not used in Ordinance.
 4. General Pretreatment Regulations - added to revised Ordinance.
 5. Pass - Through - added to revised Ordinance.
 6. Upset - added to revised Ordinance and "unforeseen acts" in Section 27-10(e) was changed to "upsets".
 7. Significant or Major User - Working definition is given in TASK 9, 11, 12 Report, but neither term appears in the Ordinance. Section 27-41(a) was also revised to read, "...complete an application for a discharge permit" instead of, "...obtain discharge permit".
 8. 330 IAC 5-12-2 - definition added to revised Ordinance (see abbreviations subsection).
 9. ISBH - definition added to revised Ordinance (see abbreviations subsection).
 10. 40 CFR 136 - definition added to revised Ordinance (see abbreviations subsection).
 11. State Disposal System Permit - definition not required, term has been deleted from Ordinance.
 12. Wastewater Hauler - defined in Article VI Wastewater Hauling.

2. Prohibitive discharges other than liquids have been addressed in Section 27-4 (d)(5) and 27-4 (d)(6). The definitions of "pollutant" and "industrial wastewater" have been expanded to include a variety of materials other than liquid which can be discharged into water.

Section 27-4

1. The City has added a lower explosive limit to the revised Ordinance (see Section 27-4 (d)(4)).
2. The City feels that its heat restriction is more than adequate to protect the POTW's from upset. Our investigation indicated that the Indianapolis heat restriction is more stringent than the Rockford, IL heat restriction. The Indianapolis Ordinance contains the exact language used in the General Pretreatment Regulations.
3. (a) Section 27-4 (f) was added and it specified the point at which the local non-categorical discharge standards and other prohibited discharges apply (i.e., the industry's point of discharge to the City's sewer).

(c) The definitions section includes "Categorical Pretreatment Standards" and Section 27-6 has been modified to explicitly address when Federal Categorical Standards apply.

Section 27-12

1. Section 27-12 has been amended to read: "There can be no special agreements and arrangements where Federal Categorical Pretreatment Standards and requirements apply."

Section 27-14

1. Affirmative response already given.

Section 27-41

1. All industrial sewer users are not required to obtain a permit. Permit issuance will be accomplished in accordance with the guidelines established in Task 9, 11, 12 Report. The Ordinance (Section 27-41 (a)) has been revised as follows: "Industrial Discharge Permits will be issued as deemed necessary by the Director."

2. Discharge permits (sample attached) will be issued incorporating both applicable local discharge limits and Federal Categorical Standards utilizing the Combined Waste Stream Formula and information from the revised Industrial Discharge Permit Application and Baseline Reports to determine in-sewer values for Categorical Pollutants. Reissuance of existing permits will take place when the City assumes the responsibilities of the control authority for the Pretreatment Program.

Permits for categorical industries will be reissued based on the effective date of their categorical standards.

3. A copy of the City's Industrial Discharge Permit is attached.

Section 27-42

1. See attached Industrial Discharge Permit application.

Section 27-48

1. The Ordinance has been revised to include the proper wording required for adequate pretreatment. (See revision to Section 27-48.)
2. The revision to this section also includes language requiring submission of Pretreatment plans and specifications to the City for review prior to their submission for final review and approval by ISBH.
3. Upsets are addressed in detail in Section 27-10, "Accidental Discharge". (See revised Ordinance.)
4. Section 27-41 (b) specifically deals with the falsification of information on any application, record, report, plan, or other document filed or required to be maintained. (See revised Ordinance.)

Section 27-50

1. Response already given.

TASK 3 REPORT

1. The toxic organic spike test, performed during the AWT pilot plant operation, showed that a mix of organics similar to the compounds detected in the Indianapolis wastewater, at approximately 7 times the average existing level, did not affect the treatment processes nor the effluent quality (Task 4, Table 5-3). Based on this spike test, a treatment plant influent TTO limit of 5 to 7 mg/l could have been recommended. However, this type of limit could not be applied to individual industrial discharges, unless there were actually some evidence of impact. However, we believe that the City should enforce limits on specific organic compounds like pentachlorophenol, rather than on a bulk grouping of organics. The necessity for this was illustrated by the plant "upset" problems, that occurred during the pilot plant run and over the course of the last year, which apparently were related to pentachlorophenol, and other specific phenolic compounds. Indianapolis has recently established an extensive permanent monitoring program for priority pollutants, which will aid the City in evaluating, on a continuous basis, the industrial wastewater contributions to its sewer system and the performance of the AWT plants. The monitoring program consists of 24-hour composite sample collection in both wastewater treatment facilities (5 sites in Belmont, 4 sites in Southport) and in all of the seven interceptors. The plant samples are analyzed weekly for heavy metals, cyanide and phenols, and monthly for organics (GC method), while the interceptor samples are analyzed monthly for all the above pollutants. Furthermore, a successful program for handling AWT interferences was developed and put into effect in January of 1984. The program is based on daily collection of 24-hour composite samples from four interceptors and the influent to both AWT plants. A nitrification inhibition test, developed by City staff, is run daily on all the samples, as a measure of caution against industrial slug discharges causing interference. All the samples are held under refrigeration for 96 hours, and analyzed as needed in the event of a plant upset. This approach enables us to identify which interceptors carried wastewater showing inhibitive effect on the nitrifying biomass, what kind of inhibitory substances were present and which industries, discharging to the suspected interceptors, could most probably have these pollutants in their effluent, so that measures can be taken by the City to resolve the problem.
2. The prediction cutoff for Table 2-4 was 1 ug/l, not 0.5 mg/l as stated in the comment. The City recognizes that even a 1 ug/l cutoff may not be adequate for dealing with PCBs or TCDD. Therefore, during the later parts of the Indianapolis Pretreatment Pilot Plant Program, extra, high sensitivity analyses were run on sludge to look for PCB that might be concentrating in the sludge.

No traces of PCB were detected in any samples with an analytical sensitivity of 0.1 ug/l. While it is recognized that TCDD may be considered harmful at levels below even a 0.1 ug/l detection limit, no EPA literature predicts TCDD from any SIC code grouping industries. The analytical measurement of TCDD at ppt levels in wastewater is an expensive specialized procedure and is not an appropriate part of this study, which used the GC/MS technique to search for a large number of compounds. The recommended approach for these compounds in Indianapolis is to prohibit their use and to prohibit their discharge at any level into the sewer system.

3. The EPA suggests that the City should have analyzed a few samples for volatile organics before and after the 15-hour aeration employed to protect the bioassay minnows from low influent wastewater sample D0. The project sampling budget for volatile organic analysis was tightly controlled in accordance with previous EPA comments. An estimate of the amount of volatile organic material that may have been removed in the bioassay aeration can be made by comparing treatment plant influent organics analytical results with activated sludge effluent organics analytical results. It is to be expected that the volatile organics levels in the bioassay would be between the levels for these two sample points in the full-scale Belmont treatment plant.

If the sum of the concentrations of benzene, chloroform, methylene chloride, and toluene are compared for the primary influent and clarifier effluent samples for the Belmont plant for February 2 and 3, a 64 percent removal rate is calculated for the existing Belmont activated sludge plant. A somewhat lower removal of volatile organics would be expected in the aeration of the bioassay sample due to the absence of the activated sludge which tends to biodegrade some of the organics.

The EPA suggests that the 15 hours of aeration would also reduce cyanide, ammonia, and phenol. The reduction in ammonia would either be due to nitrification or to stripping of ammonia. Stripping of ammonia would only occur at a high pH level (above 10) and consequently, it is not surprising that this was not experienced in the aeration of the bioassay samples. Nitrification requires the presence of an adequate population of nitrifying bacteria. Normally, five to seven days are required for the development of such a population in a BOD bottle, therefore, nitrification in the first 15 hours is unlikely. Similarly, biological removal of either cyanide or phenol is unlikely in a short 15-hour period in the absence of an acclimated culture of bacteria. Neither of these compounds is expected to air strip at neutral pH.

Whether or not some toxic organics were affected by the 15-hour aeration period, the fact remains that the 15 hours of aeration was necessary to prevent the domestic organic waste in the treatment plant influent from reducing the oxygen level to the point where toxicity was evident. This must simply be recognized as an inherent constraint on the use of this bioassay technique for detecting toxicity in raw domestic wastewater. The aeration of bioassay samples was discussed with the EPA prior to the conduct of the tests, and no improved procedure has yet been suggested.

4. While it is difficult in retrospect to identify the precise cause of the toxicity identified in the Southport samples tested in this program, the City of Indianapolis does recognize that there were toxicity problems occurring intermittently in the two Indianapolis treatment plants. The City is conducting a program involving both nitrification inhibition testing and priority pollutant analytical testing to identify the cause of this toxicity. (Please see answer to comment (1) above.) The City is assuming that the case of the bioassay toxicity detected in the February 1982 Southport testing is a phenomenon related to industrial waste and is taking action by implementing its industrial waste monitoring and treatment plant influent monitoring programs.

TASK 4 REPORT

1. The EPA comments that there is no discussion of the bioaccumulative nature of certain toxicants found in the effluent from the Belmont and Southport plants. In Chapter 7 of the Task 4 report, cadmium, arsenic, chromium, lead, and mercury are noted as being bioaccumulative and this fact is considered in setting the White River impact criteria, per Table 7-4B. Additional discussion of possible bioaccumulation of specific compounds can be found in the discussion of specific pollutants on pages 7-35 through 7-60. Finally, the Task 15, White River Water Quality Report presents a summary of all available White River data including analyses of fish tissue for bioaccumulative substances.
2. The EPA observes that the removal rates used in the development of the proposed limits are based on the pilot plant performance data. The City feels that this is reasonable and it was one of the main reasons for running the pilot plant.

The EPA also observes that the report refers to the future need for sludge impact-based sewer use ordinance limits, and requests an annual review of discharge limitations based on changes in the AWT plants. This request is reasonable. The City is currently conducting a sampling program to determine the actual removal rates at the Belmont and Southport AWT plants now that they are fully

operational. The sludge management plan for the City of Indianapolis is still in a state of flux at this time, however, it is anticipated that the plan will consider the effects of priority pollutants on any treatment or disposal elements in the sludge management plan. The need for sludge impact-related pretreatment limits will be evaluated when such impacts can be identified. As was pointed out in the report, the anticipated sludge impacts may be of an economic nature rather than of a "feasibility" nature. That is, the impacts could be mitigated either by installing necessary pretreatment or simply by charging dischargers for the cost of contending with the discharged industrial pollutants.

3. Response to Comment 3: The City of Indianapolis incorporated the proposed Ordinance numbers as interim limits in the Sewer Use Ordinance and will revise them as necessary when the actual removal rates at the Belmont and Southport plants are established on the basis of the currently ongoing sampling program.

Table 3-3 (Task 4 Report)

1. The EPA requests submission of the complete GC/MS computer tape for all toxicants analyzed by the City on the influent, effluent, and sludge for the Belmont and Southport plants. A copy of the written laboratory reports for all GC/MS analyses performed for this project has been forwarded to EPA. Note that these reports include the data for the ten highest non-priority pollutants analyzed for each sample. If these data are not sufficient, JMM can provide the complete GC/MS computer tape. However, JMM would incur significant costs to provide the computer tape in a format useful to the EPA. As the provision of this tape is not within the contract scope of the project as written, JMM would request additional payment for providing the computer tape.

Table 3-6 (Task 4 Report)

1. The EPA asks why only treatment process inhibitory threshold values were used in developing the list of toxicants in Table 3-6. As stated on page 3-21 of the text, compounds are listed in Table 3-6 if any sample yielded a concentration greater than or equal to 10 percent of either a process impact threshold or a water quality criteria value. Thus, water quality criteria values were considered in including compounds on Table 3-6.

The EPA lists seven compounds and notes that they were excluded from further consideration by being excluded on Table 3-6. The inference in the EPA's comment is that these compounds should have been included. The attached Table 3-6(a) presents the pertinent data for the seven compounds listed by the EPA. The table lists

the maximum wastewater concentration, the EPA river criteria (equal to the EPA maximum concentration per the "Final Water Quality Criteria, 1980"), the literature impact concentration for treatment processes, and "percentage of limiting value" which is equal to the ratio of the maximum wastewater concentration to the lower of the EPA river criteria or literature POTW impact concentration values expressed as a percentage. Please note that as indicated on this table, the maximum wastewater concentration for 1,2-dichlorobenzene is 120 ug/l rather than the 250 ug/l level listed in the Task 4 Report in Table 3-3. We have checked the database and apparently the 250 ug/l number is a typographical or copying error. We apologize for this error. As can be seen on the attached Table 3-6(a), six of the seven EPA-suggested compounds exhibit "percentage of limiting value" numbers less than 10 percent, while 1,2-dichlorobenzene registers at 10 percent. Of the seven compounds, only 1,2-dichlorobenzene should have been included on Table 3-6 in the Task 4 Report.

The second part of the EPA comment questioned the selection of the 10 percent level as a cutoff value. The 10 percent cutoff was established presuming that any compound present at less than 10 percent of the process impact threshold was unlikely to actually impact the process and that any compound present in the influent at less than 10 percent of a river impact criteria was unlikely to pass through the plant in sufficient quantity to actually impact the river. In other words, if a compound was present in the influent at 10 percent of the river impact criteria, the probable removal through the treatment plant would reduce it to well below river impact level in the effluent. As a test case, 1,2-dichlorobenzene can be investigated to determine what conclusion would have been arrived at in the Task 4 Report, had this compound been included on Table 3-6. The maximum concentration of 1,2-dichlorobenzene ever detected in a pilot plant effluent sample is 3.9 ug/l. This indicates that the removal through the AWT of 1,2-dichlorobenzene is at least 97 percent. Based on the available data, it is expected that an influent concentration of up to 3 mg/l will be tolerated both from a process and a river impact basis for this compound. Because 3 mg/l is approximately 25 times the maximum concentration ever detected for this compound at Indianapolis and approximately 400 times the average influent concentration, it does not appear necessary to develop a specific numerical limitation on discharge of this compound in Indianapolis sewers. This example case evaluation illustrates the appropriateness of the 10 percent cutoff level because any compound excluded by the cutoff would be of even less concern than 1,2-dichlorobenzene.

2. EPA questions why acute toxicity effects were considered more heavily than chronic toxicity effects in developing Table 3-6. Acute toxicity effects should be considered in evaluating the impact of a wastewater at the concentration at the point of discharge. Consideration of chronic toxicity impacts should be based upon concentrations expected outside the immediate discharge zone. As shown in the water quality modeling study presented in the Task 15 "Water Quality of the White River" Report, the concentration of priority pollutants outside the immediate discharge zone of the Indianapolis discharge are reduced quickly to extremely low levels through dilution and other mechanisms. The assumption of extreme low flow conditions in the receiving water is appropriate for considering acute toxicity impacts, but chronic toxicity problems should be evaluated assuming more normal levels of flow. Normal flows in the White River provide a 10 to 1 dilution ratio which also greatly reduces the impact of any potential chronic toxicant.
3. Special testing specifically for the presence of the sodium salt form of PCP or chlorinated forms of Dioxin was not conducted simply because it was not part of the scope of this broad analytical survey of Indianapolis pretreatment problems. The GC/MS procedures employed do detect the sodium form of PCP, but include it in a total PCP value. Likewise, Dioxin would have been reported if it occurred above the GC/MS detection limit. The project achieved a significant goal by identifying PCP as a potential problem for Indianapolis and indicating that the City should investigate the presence of this compound and related compounds in an ongoing analytical and industrial surveillance program. Analyses for chlorinated dibenzo-p-dioxins and dibenzofurans of two bottom sediment samples from the White River, upstream and downstream of the AWT plants, collected in April of 1983, were performed by Wright State University and the results are attached. No tetra-through hexa- CCDs or CDFs were detected in both locations. Concerns on the toxicity of these compounds are not well defined, but it is generally accepted that the toxicity of these higher forms of CCDs and CDFs is greatly less than the toxicity of the tetra- CCD and CDF.

The City of Indianapolis appreciates the thorough review of the Indianapolis pretreatment program reports conducted by the EPA. We will be happy to provide any further clarification of the report results as is necessary. It should be realized however, that the pilot plant program conducted for the City of Indianapolis Pretreatment Program had both short-term and long-term objectives. In the short term, the program was intended to provide sufficient documentation to support defensible Ordinance limitation numbers for the City of Indianapolis. In the long run, the program intended to lay the ground work for the continuing industrial surveillance program which will deal with industrial pretreatment problems in Indianapolis on an ongoing basis from now on. Thus, the program was intended to answer some questions but only pose others.

<u>INDUSTRY</u>	<u>FLOW-GPD</u>	<u>SIC(S)</u>	<u>POLLUTANTS*</u>
Advance Plating Works	594	3471	Cd, Cr, Cu, Ni, Zn
Advance Plating Works	1562	3471	Cd, Cr, Cu, Ni, Zn
Alloy Architectural Product	500	3442, 3444	
Aluminum Finishing Corp.	131380	3471	Cu, Ni, Zn
Aluminum Finishing Corp.	18800	3471	Cu, Ni, Zn
American Monitor Corp.	5340	3693, 3841, 3811	
American Monitor Corp.	4145	3679	Cu
American Valve & Enameling	2836	3469, 3479	
Anchor Galvanizing	28700	3479	Zn
Barrick Polishing & Plating	11000	3471	Zn, CN
BDP CO. (Bryant)	27500	3583, 4226	
BDP CO. (Bryant-Carrier CO)	565300	3585, 3699	Cr, Ni, Zn
Best Lock Corp.	18176	3429, 3471	Carbon Tetrachloride, Chloroform
Beta Corporation	49198	3499	Ethylbenzene, Toluene
Burgess Plating & Polishing	1900	3471	Cu, CN, Ni, Zn
CTP Corp/Tube Processing	10000	3498	
Capitol Chrome Corporation	600	3471, 3599	Cr
Chevrolet Motor Division	560000	3465, 3714	Cu, Pb, Ni, Zn, Phenol, Hg, Selenium
Chrysler Corp. (Electrical)	96200	3694, 3714	Cu
Chrysler Corp. (Foundry)	705000	3714, 3321	
City Plating	26500	3471	Cr, CN, Ni
Colors, Inc.	195222	3471	Ni
Contact Metals & Welding	327651	3643, 3623, 3999	Cd, Cr, Cu, CN, Ni, Ag
Crown Products	950	3479	
Cryogenic Associates	1932	3559	

<u>INDUSTRY</u>	<u>FLOW-GPD</u>	<u>SIC(S)</u>	<u>POLLUTANTS</u>
Dean Brothers Pumps	13729	3561	
Dean Brothers Pumps	2730	3561	
Diamond Chain CO.	147927	3568,3566	Cd, Cr, Cu, CN, Pb, Ni, Zn, Phenols
Diversified Systems	7800	3679, 3613	Cu, Pb
E & G Plating	858	3471	Cd, Cu, CN, Ni, Zn
Electro Painters	850	3479	
Equipment Engineering CO.	1670	5084, 3569	
Ertel Manufacturing Corp.	8000	3592,3361	
Farms Fans Inc.	1079	3523, 3564	
Ford Motor Company	697760	3714	
Freightliner Corp.	18635	3711	
General Devices CO.	5000	3499, 3471	Cd, CN, Zn
Green Thomas L & CO.	2702	3551	
H-N Advertising & Display	26895	2542, 3993	
Herff Jones CO.	102534	3911	Cu, CN, Ni
Holcomb & Hoke MFG. CO.	10732	2431, 2541, 3446	
Indiana Metal Treating	11400	3398	CN
Indiana Soft Water Service	9000	4226, 3589	
Indiana Soft Water Service	33000	4226, 3589	
Industrial Anodizing	46725	3471	
Industrial Metal Finishing	7905	3471, 3479	
International Harvester	120000	3519, 3714, 3321	Cd, Cr, Cu, Pb, Zn, Phenols
ITT Hoffman	44000	3494	Cr, Cu, Pb, Ni, Zn
Jenn-Air Corporation	230000	3631	Cu, Ni, Zn
Klincher Locknut Corp.	240	3452	

<u>INDUSTRY</u>	<u>FLOW-GPD</u>	<u>SIC(S)</u>	<u>POLLUTANTS</u>
La Belle Optical CO. Inc.	100	3851	
Luther, Frederick CO.	137	3861, 7395	
Major Tool & Machine CO.	3000	3599	
Maul Technology Corp.	140000	3769, 3471	Cr, Cu, CN
Metal Finishing	527.6	3471	Cr, Cu, CN, Ni
National Aluminum Extrusion	6482	3354, 3361, 3441	Cr
Naval Avionics Center	320000	3679, 3662, 3471	Cd, Cr, Cu, CN, Pb, Ni, Ag, Zn, Phenol
Nemco Corporation	675	3724	
Ni-Mold Inc.	135	3471	
Niehaus Bros. Inc.	4700	3479, 3471	CN
Omni Metals	7300	3499, 3471	Ni
Orman O. Company	4505	3499, 3479	
Orthopedic Specialities Inc.	60	3842	
Perry Manufacturing	1152	3446	
Precision Rubber Plate Co.	1975	3555	
Production Plating CO.	19700	3471	Cd, Cr, CN, Ni, Zn
Progressive Plating	69400	3471	Cd, Cr, CN, Zn
PT Components (FMC Chain)	682000	3568	
Purtee Plating	150	3471	Cu, CN
R & S Plating	3950	3471	Cd, Cr, Cu, CN, Zn
RCA Corporation	150000	3651, 3662	Cr, Cu, Ni, Zn,
RCA Corporation	558000	3079, 3679, 3677	Methylene Chloride
RCA Corporation	103149	3652	Cr, Ni
Reis-Nichols Inc.	90	3479, 3911	
Schmidt Edward H & Sons	5322	3851	
Schwitzer Division	215907	3714	

<u>INDUSTRY</u>	<u>FLOW-GPD</u>	<u>SIC(S)</u>	<u>POLLUTANTS</u>
Service Supply	30000	3471	Cd, Ni, Zn
Sherman Carburetor Parts Co.	698	3592, 3714	
Stewart Manufacturing CO.	1000	3634	
Stewart-Warner Corp.	333187	3443	Cd, Cr, Cu, CN, Pb, Ni
Texscan Corporation	5571	3679	Cu, Ni
Threaded Rod Company	14072	3451	
Titan Industries	17237	3471, 3079	
Tube Processing Corp.	9858	3728	
Union Carbide Corp.	900	3542	
Van Westrum MFG., CO.	260	3479	
Von Duprin, INC.	175000	3429, 3442	Cr, Cu, CN, Ni, Zn, Selenium, Methylene Chloride
Wallace Expanding Machines	1700	3465	
Western Electric CO.	451345	3661	Cr, Cu, CN, Pb, Ni, Zn
Williamson Polishing & Plating	89252.2	3471	Cd, Cr, Cu, CN, Ni, Zn
Wright Manufacturing	12150	3471, 3442	Ni

*NOTE:

Industries with no corresponding pollutants in this column have no toxic pollutants in their discharge, according to the Industrial Survey data gathered during the Indianapolis Pretreatment Study and the City's Industrial Surveillance files.

INDIANAPOLIS DEPARTMENT OF PUBLIC WORKS

ADVANCED WASTEWATER TREATMENT

INDUSTRIAL DISCHARGE PERMIT APPLICATION

Section I Applicant and Facility Description

Unless stated otherwise, all items are to be filled out completely. If an item is not applicable indicate by noting "NA".

1. Name of Facility _____

2. Mailing Address _____
3. Address of Premises _____
4. Applicant's Authorized Agent or Contact Official

Name and Title

Phone Number

5. Responsible individual to contact in case of emergency
(e.g., spill, fire, process upset, etc.)

Name and Title

Phone Number

Section II Plant Operations

1. On a separate sheet, provide a detailed description of the manufacturing process or service activity provided on the premises. Include a description of how each process waste stream is generated. Information should be related to Question #5 in Section III.
2. Principal raw materials used and intermediate products:

3. Chemicals and compounds used (Refer to Table I):

4. How are these chemicals stored?

5. Description of products or service and annual production rate, if applicable:

6. If your facility is subject to a National Categorical Pretreatment Standard, has a baseline report (403.12(b)) been submitted:

Section III Water Usage and Discharge Information

1. List intake water sources and volumes:

<u>Source</u>	<u>Volume</u>	(Check One) <u>Estimated/Measured</u>
Municipal Water System	_____ gallons/day	_____/____
Private Well	_____ gallons/day	_____/____
Surface Water	_____ gallons/day	_____/____
Other	_____ gallons/day	_____/____

2. List average volume of discharge or water loss to:

<u>Source</u>	<u>Volume</u>	(Check One) <u>Estimated/Measured</u>
*City Sewer System	_____ gallons/day	_____/____
Natural Outlet	_____ gallons/day	_____/____
Waste Hauler	_____ gallons/day	_____/____
Evaporation	_____ gallons/day	_____/____
Contained in Product	_____ gallons/day	_____/____
Other (Specify)	_____ gallons/day	_____/____

3. List average water usage for:

Source	Volume	(Check One)
		<u>Estimated/Measured</u>
*Process Wastestream #1	_____ gallons/day	
*Process Wastestream #2	_____ gallons/day	
*Process Wastestream #3	_____ gallons/day	
*Cooling Water	_____ gallons/day	
*Sanitary Water	_____ gallons/day	
Boiler Feed	_____ gallons/day	_____/____
Other (Specify)	_____ gallons/day	_____/____

*These values must be average measured volumes, not approximated.

4. Is the discharge to the sewer: Continuous _____
Batch _____
If batch discharge, give the frequency of occurrence:

What is the average volume in gallons of each batch?

What is the peak volume in gallons of each batch?

5. Provide a schematic of the plant flow showing process, sanitary, cooling streams, etc., and their point of entry into the sewer system. Indicate on the schematic, the point where sampling will occur.

Section IV Pretreatment

1. Describe any wastewater treatment equipment or processes in use:

2. Describe any additional pretreatment facilities and/or processes under consideration. Include a specific time schedule for completion:

3. If a treatment system exists, what method is utilized to dispose of pretreatment sludges/residuals?

4. If a private hauler is used for sludges/residuals disposed, give name and ISBH permit number.

5. Where is ultimate disposal site for sludges/residuals?

Section V

Wastewater Characteristics

1. Attach any sampling data pertaining to the facility discharge to the sewer system. Explain where and when the sampling was accomplished, what type of sample was taken (e.g., grab, composite), and how many were analyzed.
2. If no sampling data is available, testing must be performed on the discharge for any pollutant believed to be present. A representative list of pollutants is contained in Table I, attached to this application. The sample must be a 24-hour composite taken during normal production activity and/or representing typical wastewater flows.

TABLE I

- acenaphthene
- acrolein
- acrylonitrile
- benzene
- benzidine
- carbon tetrachloride (tetrachloromethane)
- chlorinated benzenes (other than dichlorobenzenes)
- chlorobenzene
- 1,2,4-trichlorobenzene
- hexachlorobenzene (perchlorobenzene)
- chlorinated ethanes
- 1,2-dichloroethane (ethylene chloride)
- 1,1,1-trichloroethane (methyl chloroform)
- hexachloroethane (perchloroethane)
- 1,1-dichloroethane (ethylidene chloride)
- 1,1,2-trichloroethane (vinyl trichloride)
- 1,1,2,2-tetrachloroethane (acetylene tetrachloride)
- chloroethane (ethylchloride)
- chloroalkyl ethers (chloromethyl, chloroethyl and mixed ethers)
- bis(chloromethyl) ether
- bis(2-chloroethyl) ether
- 2-chloroethyl vinyl ether (mixed)
- chlorinated naphthalene
- 2-chloronaphthalene
- chlorinated phenols (other than those listed elsewhere; includes trichlorophenols and chlorinated cresols)
- 2,4,6-trichlorophenol
- 4-chloro-3methylphenol (parachlorometa cresol)
- chloroform (trichloromethane)
- 2-chlorophenol (para-chlorophenol)
- dichlorobenzenes
- 1,2-dichlorobenzene(ortho)
- 1,3-dichlorobenzene(meta)
- 1,4-dichlorobenzene (para)
- dichlorobenzidine
- 3,3'-dichlorobenzidine
- dichloroethylenes (1,1-dichloroethylene and 1,2-dichloroethylene)
- 1,1-dichloroethylene
- 1,2-trans-dichloroethylene (acetylene dichloride)
- 2,4-dichlorophenol
- dichloropropane and dichloropropene
- 1,2-dichloropropane (propylene dichloride)
- 1,2-dichloropropylene (1,3-dichloropropene)
- 2,4-dimethylphenol (2,4-xyleneol)
- dinitrotoluene
- 2,4-dinitrotoluene
- 2,6-dinitrotoluene
- 1,2-diphenylhydrazine (hydrazobenzene)
- ethylbenzene
- fluoranthene
- haloethers (other than those listed elsewhere)
- 4-chlorophenyl phenyl ether
- 4-bromophenyl phenyl ether
- bis(2-chloroisopropyl) ether
- bis(2-chloroethoxyl) methane
- halomethanes (other than those listed elsewhere)
- methylene chloride (dichloromethane)
- methyl chloride (chloromethane)
- methyl bromide (bromomethane)
- bromoform (tribromomethane)
- dichlorobromomethane
- trichlorofluoromethane (fluorocarbon-11)
- dichlorodifluoromethane (fluorocarbon-12)
- dibromochloromethane (chlorodibromomethane)
- hexachlorobutadiene
- hexachlorocyclopentadiene (perchlorocyclopentadiene)
- isophorone
- naphthalene
- nitrobenzene
- nitrophenols (including 2,4-dinitrophenol and dinitrocresol)
- 2-nitrophenol (para)
- 4-nitrophenol (ortho)
- 2,4-dinitrophenol
- 4,6-dinitro-2-methylphenol (4,6-dinitro-o-cresol)
- nitrosamines
- N-nitrosodimethylamine
- N-nitrosodiphenylamine
- N-nitrosodi-n-propylamine
- pentachlorophenol
- phenol
- phthalate esters
- bis(2-ethylhexyl) phthalate
- butyl benzyl phthalate
- di-n-butyl phthalate
- di-n-octyl phthalate
- diethyl phthalate
- dimethyl phthalate
- polynuclear aromatic hydrocarbons
- benzo(a)anthracene (1,2-benzanthracene)
- benzo(a)pyrene (3,4-benzopyrene)
- 3,4-benzofluoranthene
- benzo(k)fluoranthene (11,12-benzofluoranthene)
- chrysene (1,2-benzphenanthrene)
- acenaphthylene
- anthracene
- benzo(ghi)perylene (1,12-benzonervylene)
- fluorene((alpha)-diphenylene methane)
- phenanthrene
- dibenzo(a,h)anthracene (1,2,5,6-dibenzanthracene)
- indeno (1,2,3-cd)pyrene (2,3-o-phenylenepylene)
- pyrene
- tetrachloroethylene (perchloroethylene)
- toluene (methylbenzene or toluol)
- trichloroethylene
- vinyl chloride (chloroethylene)
- pesticides and metabolites
- aldrin
- dieldrin
- chlordane (technical mixture & metabolites)
- DDT and metabolites
- 4,4-DDT
- 4,4'-DDE (p,o'-DDX)
- 4,4'-DDD (p,o'-TDE)
- endosulfan and metabolites
- endosulfan I (a-endosulfan-Alpha)
- endosulfan II (b-endosulfan-Beta)
- endosulfan sulfate
- endrin and metabolites
- endrin
- endrin aldehyde
- heptachlor and metabolites
- heptachlor
- heptachlor epoxide
- hexachlorocyclohexane (all isomers)
- a-BHC-Alpha

Page #1 of

Permit No. # _____

Application No. # _____

City of Indianapolis
Department of Public Works

AUTHORIZATION TO DISCHARGE

INDUSTRIAL WASTEWATER TO THE MUNICIPAL SEWER SYSTEM

In compliance with the provision of Chapter #27 of the Municipal Code of the City of Indianapolis, Indiana, and in accordance with General Ordinance #44, 1978,

is authorized to discharge wastewater from a facility located at

to the Indianapolis Municipal Sewer System.

The permit shall become effective on

This permit and the authorization to discharge wastewater shall expire at midnight _____, 19____. In order to renew authorization to discharge beyond the date of expiration, the permittee shall submit such information and forms as required by the Department of Public Works, City of Indianapolis, Indiana, no later than sixty (60) days prior to the date of expiration.

Signed this _____ day of _____, 19____, for
the Department of Public Works, City of Indianapolis, Indiana.

Dale R. Bertelson, Section Head
Industrial Surveillance

Richard A. Rippel, Director
Department of Public Works

Part I

Page # of

Permit No. # _____

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning _____ and lasting until _____, the permittee is authorized to discharge from a facility located at _____

Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS

Effluent Characteristic	Daily Average	Monitoring Frequency	Sample Type
----------------------------	------------------	-------------------------	----------------

SPECIAL LIMITATIONS

- a. In addition to the foregoing limitations, the provisions of Sections #307 and #308 of the "Federal Water Pollution Control Act Amendments" of 1972 and Indiana Stream Pollution Control Board Regulations are incorporated by reference into this permit.
- b. Samples taken in compliance with the monitoring requirements above shall be taken _____
- _____
- _____

Part I

Page # of

Permit No. # _____

B. MONITORING AND REPORTING

1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

2. Reporting

The permittee shall submit monitoring reports to the Industrial Surveillance Branch of the Department of Public Works containing results obtained during the previous month and shall be postmarked no later than the 15th day of the month following each completed monitoring period. The first report shall be submitted by _____ for the month of _____.

a. The Industrial Surveillance Branch is at the following location:

Industrial Surveillance Branch
Department of Public Works
2700 South Belmont Ave.
Indianapolis, Indiana 46221

3. Test Procedures

Test procedures for analysis of pollutants shall conform to regulations published pursuant to Section #304 (g) of the Act, the most recent edition of "Standard Methods for the Examination of Water and Wastewater", or other methods approved by the Indiana Stream Pollution Control Board, under which such procedures may be required.

4. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following data:

- a. The Exact Place, Date and Time of Sampling
- b. The Dates the Analyses were Performed
- c. The Person(s) Who Performed the Analyses
- d. The Analytical Techniques or Methods Used
- e. The Results of All Required Analyses

Part I

Page # of

Permit No. # _____

5. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation and recording from continuous monitoring instrumentation shall be retained for a minimum of three (3) years, or longer if requested by the Industrial Surveillance Branch of the Department of Public Works.

C. Special Conditions

SAMPLE TYPES:

GRAB: A portion of the discharge taken from the sampling point during a period of maximum flow and/or production.

COMPOSITE: A sample made up of equal portions of the discharge taken from the sampling point at 30 minute intervals during the production cycle. No samples are to be taken on off-days or when there is no production.

ESTIMATE: Total of calculation made from pump discharge ratings and/or from billings of water suppliers.

METER: Readings taken from a flow meter.

A. MANAGEMENT REQUIREMENTS

1. Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit. the discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions, production increases, or process modifications which will result in new, different or increased discharges of pollutants must be reported by submission of a new application or, if such changes will not violate the effluent limitations specified in this permit, by notice to the permit issuing authority of such changes. Following such notice, the permit may be modified to specify and limit any pollutants not previously limited.

2. Non-Compliance Notification

If, for any reason, the permittee does not comply with or will be unable to comply with any daily average effluent limitations specified in this permit, the permittee shall provide the Industrial Surveillance Branch of the Department of Public Works the following information, in writing, within five (5) days after becoming aware of the condition:

- a. A description of the discharge and cause of non-compliance.
- b. The period of non-compliance, including exact dates and times, or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the non-complying discharge.

3. Facilities Operation

The permittee shall at all times maintain a good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

4. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to the Municipal sewer system resulting from non-compliance with any effluent limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.

5. The Industrial Surveillance Branch shall be notified immediately in the event of an accidental spill or slug discharge into the sewer system at 633-5476 or 353-2111 after 5 p.m. Monday-Friday, or weekends and holidays.

6. Removed Substances

Solids, sludges, filter backwash or other pollutants removed from or resulting from treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering Municipal sewer systems and to be in compliance with all Indiana Statutory Provisions, regulations, relative to refuse, liquid or solid waste disposal.

7. Power Failures

In order to maintain compliance with the effluent limitations and prohibitions of this permit, the permittee shall, upon the reduction, loss or failure of one or more of the primary sources of power to the facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit, the permittee shall halt, reduce or otherwise control production or discharge in order to maintain compliance with the effluent limitations and conditions of this permit.

8. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities from which the authorized discharge emanates, the permittee shall notify the succeeding owner or controller of the existence of the permit by letter, a copy of which shall be forwarded to the Industrial Surveillance Branch of the Department of Public Works.

9. Permit Modification

After notice and opportunity for a meeting with the Industrial Surveillance Office, this permit may be modified, suspended or revoke in whole or in part during its term for shown cause including, but not limited to, the following:

- a. Violation of any terms or conditions of this permit.
- b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts,
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

10. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of the permit, shall not be affected thereby.

TABLE 3-6(A)

**INDIANAPOLIS PRETREATMENT PROGRAM
EPA-SUGGESTED COMPOUNDS OF CONCERN**

<u>Number</u>	<u>Compound</u>	<u>Maximum Wastewater Concentration ($\mu\text{g/l}$)</u>	<u>EPA River Criteria ($\mu\text{g/l}$)</u>	<u>Literature POTW Impact Concentration ($\mu\text{g/l}$)</u>	<u>Percentage of Limiting Value (%)</u>
25	1,2-Dichlorobenzene	120	1,120	5,000	10.7
48	Dichlorobromomethane	92	11,000	>10,000	0.9
51	Chlorodibromomethane	63	11,000	>10,000	0.6
68	Di-n-butyl phthalate	34	940	>10,000	3.6
85	Tetrachloroethylene	58	5,280	>10,000	1.1
87	Trichloroethylene	270	45,000	>10,000	2.7
114	Antimony	300	9,000	--	3.3

Wright State University
Dayton, Ohio 45435

October 27, 1983

Ms. Vicky Keramida
City of Indianapolis
Dept. of Public Works
2460 City-County Building
Indianapolis, Indiana 46204

Dear Ms. Keramida:

Presented herewith are the results of our analyses for chlorinated dibenzo-p-dioxins and dibenzofurans of two bottom sediment samples from the White River near Indianapolis. These samples were collected and shipped to our laboratory by the U.S. Geological Survey office in Indianapolis. The analyses were accomplished under City of Indianapolis Purchase Order No. 83PL41429. The data reported herein was verbally transmitted to you in our telephone conversation of Sept. 12, 1983.

The two samples received were from two different locations in the White River, as indicated on the attached Sample Receipt Documentation. Each of the two samples was actually contained in three separate jars. In an attempt to obtain a representative sample of the sediment from each of the two sites, two composite samples, consisting of portions of the sediments from each of the respective sets were prepared. Thus, aliquots of approximately 50 grams each of samples UDI-1 and UDI-2 were combined and mixed thoroughly to obtain the "White River Below Southport Road" sample. An aliquot of this composite was then withdrawn for analysis. Similarly, 50 gram portions of samples UDI-4 and UDI-5 were mixed to obtain the "White River at Morris Street" sample, an aliquot of which was analyzed. The quantities of each of the two samples analyzed and the quantities of labelled internal standards added to the samples prior to analysis are indicated on the attached Brehm Laboratory Sample Tracking Form.

The analytical procedures applied for these analyses are described in detail in the Brehm Laboratory Analytical Protocol which is appended to this report.

The results of the analyses are summarized in Table 1, and copies of the actual mass chromatograms obtained in the analyses are also attached. As can be seen from the results presented in Table 1, only hepta- and octachlorinated dibenzo-p-dioxins (CDDs) and dibenzofurans (CDFs) were detected in the two samples analyzed. Detection limits for the lower chlorinated CDDs and CDFs (tetra- through hexa-), which were not observed, were in the low parts-per-trillion range (~ 20 -100ppt). Recoveries of the added internal standards achieved in these analyses were all quite high (ranging from 82-95%), indicating that the analytical methodology applied is quite effective.

Ms. Vicky Keramida
October 27, 1983
Page 2

If you have any further questions concerning these results or the report, please don't hesitate to contact us. We apologize for the delay in completing these difficult analyses and appreciate your patience in awaiting the results.

Under separate cover, we are submitting our invoice for this work.

Sincerely,

A handwritten signature in cursive script, appearing to read "Thomas O. Tiernan".

Thomas O. Tiernan, Ph.D.
Professor of Chemistry and
Director of Brehm Laboratory

TOT/gdw

Attachments

TABLE 1

BREHM LABORATORY, WRIGHT STATE UNIVERSITY, DAYTON, OHIO 45435

RESULTS OF ANALYSES OF WHITE RIVER SEDIMENT SAMPLES SUBMITTED BY CITY OF INDIANAPOLIS, INDIANA FOR CHLORODIBENZO-P-DIOXINS (CDDs) AND CHLORODIBENZOFURANS (CDFs)

Quantities of Total CDDs/CDFs (Minimum Detectable Concentrations in Parentheses) a,b.														
WSU Sample Number	Customer Sample Identification	TCDDs	% Recovery of 37Cl ₁₄ - 2,3,7,8-TCDD Internal Standard				% Recovery of 37Cl ₁₄ - HxCDD Internal Standard				Recovery of 13C ₁₂ -OCDD Internal Standard	OCDF		
			TCDDs	PCDDs	PCDFs	HxCDDs	HxCDFs	HpCDDs	HpCDFs	OCDD				
UDI-1,2 Composite	White River Below South- port Road	N.D. (20ppt)	82	N.D. (20ppt)	N.D. (50ppt)	N.D. (50ppt)	N.D. (100ppt)	N.D. (100ppt)	1200ppt	90	1300ppt	3300ppt	89	43 ppt
UDI-3,4 Composite	White River at Morris Street	N.D. (30ppt)	95	N.D. (50ppt)	N.D. (60ppt)	N.D. (60ppt)	N.D. (100ppt)	N.D. (100ppt)	1200ppt	90	1400ppt	3200ppt	91	45 ppt

a. "N.D." indicates "Not Detected" at a concentration in excess of the Minimum Detectable Concentration.

b. Prefix designations for CDDs/CDFs are: T- = tetra; P- = penta; Hx- = hexa; Hp- = hepta-; O- = octa-.